Electricity on the Farm

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY

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NOVEMBER
1934

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THRIFT COOKER

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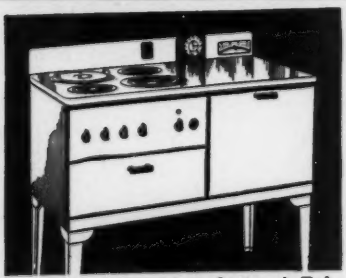
WHAT MOTHER REALLY WANTS



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ELECTRIC RANGE

Why not make this a Christmas that Mother will long remember. Give her a modern Electric Range—easier and better cooking, new hours of freedom from the kitchen—time to really enjoy life. What gift could be more appropriate than one that lightens that most laborious and time-consuming of household tasks—the cooking of three meals a day—365 days in the year? Here's a gift that will really beautify and modernize the heart of HER home—the kitchen—a gift that will bring a new order of convenience, cleanliness and economy. Go to your Electric Company today and inspect the beautiful modern Hotpoint Electric Ranges. Edison General Electric Appliance Co., Inc., 5610 W. Taylor Street, Chicago.

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November, 1934
Vol. 7 No. 11

Electricity on the Farm

IN THIS ISSUE

Wholesome Milk—How to Sterilize Utensils to Improve Quality and Price

BY GEO. W. KABLE

Why sterilization? This may be an unanswered question in the minds of many dairymen who do not fully realize that besides producing a better grade product it means increased profits for them. The author not only answers this question on page 4, but goes thoroughly into the subject of sterilization of dairy farm equipment.

My Kitchen Is an Investment

BY MRS. D. C. PRIM

Modern electrical equipment, coupled with the proper arrangement of such, will go a long way to lighten up the tasks which face the housewife every day of the year. This was the experience of the author who tells on page 7 how she modernized her kitchen.

Water System Pays Its Way

BY ROBERT J. O'BRIEN

The electric water system is economical to operate and therefore need not be slighted for fear of heavy operating costs when improvements are made. The O'Briens are enthusiastic about their water equipment and have a message of praise for what it now means to them. See page 9.

Regular Monthly Features

Electrical Housekeeping, page 10; Questions and Answers, page 16; On the Air, page 17; What's New, page 17.

EDITORIAL

This Is the Age of Sterilization

FOODS and beverages apt to carry harmful bacteria are treated either with heat or chemicals to make the foods and drinks safe for human consumption.

Results attained are astounding. Typhoid is becoming a rare disease today, dysentry and other water borne diseases are rapidly being eliminated.

But sterilization does not stop at foods and beverages. Today it includes containers in which these materials may be stored or handled.

Electric sterilization of dairy utensils is fast becoming popular. Heat control is perfect, and convenient. Results are highly satisfactory. Bacterial reduction in dairy products has been advanced tremendously by modern electrical devices, and among which the sterilizer is rapidly taking a prominent position.

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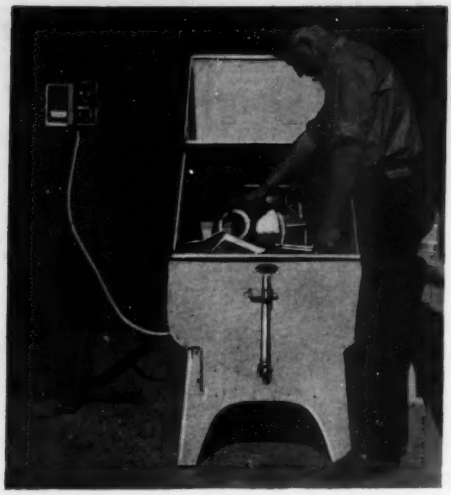


Left: There is a size and type of sterilizer to meet the need of every dairyman; they are responsible for destroying bacteria which would otherwise reduce the quality as well as the price received for his product.

Below: A large type cabinet sterlizer in which cans and other milking equipment can often remain until time for their next use after they have been sterlized.

WHOLESOME MILK

How to Sterilize Utensils to Improve Quality and Price

By GEO. W. KABLE

CLANG! Clang! Clang! Anyone old enough to have a gray hair or two has heard the old horse-drawn milk wagon come down the village street with bells ringing and cans rattling. Perhaps you drove the old wagon yourself and parceled out the milk with a quart measure to householders who came out with tin pails or fruit jars and a nickel to buy. The "fish wagon" days of milk peddling are bygones, and with them has gone most of the roll butter traded to the country store for coffee and calico.

Public Demands a Quality Product

Since the dairy cow has come to be known as the "foster mother of the human race," and "milk for babies" and bigger folks is the doctor's prescription for an ideal food, the public is demanding quality. The milk check is no longer based solely on "pounds delivered." It is now pounds delivered of grade A, grade B, or grade C. High grade milk and sweet cream butter command a premium in price. Grade and price depend on a number of factors, of which cleanliness and sanitation head the list.

Bacteria counts, acidity and sediment tests—indicators of sour or insanitary milk—are the bugaboo of many a dairyman. On the other hand, they are good allies of the dairyman who plays the

game for a high quality product. The fact that they can be controlled enables him to get a better price and have a surer market for his milk or cream.

There are good and bad bacteria. But—sad fact—it's the bad ones that get the upper hand and take the profit out of the check when the pails and cans and strainers are not washed clean and sterilized. These bad bacteria are prolific breeders, too. They have rabbits and flies backed off the boards. A few of them left in a little moist corner of a milk can or put into a can of milk in the morning may have a family of several millions by the next day.

The sterilization of a dairy utensil is the destruction of these prospective great granddaddies and great grandmothers of bad bacteria before they are born.

Here's what Uncle Sam has to say about utensils:

"Utensils which have not been properly washed and treated to kill bacteria contain large numbers of bacteria. Indeed, dairy utensils are usually the source of most bacteria found in market milk. . . ." (USDA Farmers' Bulletin 602, Revised 1932.)

Technique of Cleaning Utensils

The technique of cleaning the utensils and killing the bacteria is simple. Utensils are easier to wash immediately after being used. They should first be rinsed with cold water. This helps to keep the wash water clean, reduces the amount of washing powder necessary, and prevents "cooking" the milk solids to the utensils. They should then be washed thoroughly in water as hot as the hands can stand (about 120° F) using a brush and washing powder—not soap or soap powder. Next rinse with clean water. It need not be hot, but warm water is desirable. Then sterilize and dry.

There are four common methods of sterilizing utensils. Steam, hot water, hot air, or chemicals are the sterilizing agents. Any of these agents will do a good job of sterilizing *if* properly used. That "if" is the fly in the ointment. It is so easy to let the "ifs" get you that many city health departments will approve nothing but steam sterilization.

The effectiveness of chemicals is dependent upon always taking time to do the job just right. If you are not careful in making solutions of proper strength; if you use them too long without making up fresh; if you do not get the chemical on the bacterium; you don't get him. Then chemicals act on metals, and if the tinning is poor on the utensils, the chemicals may cause off-flavors in the milk.

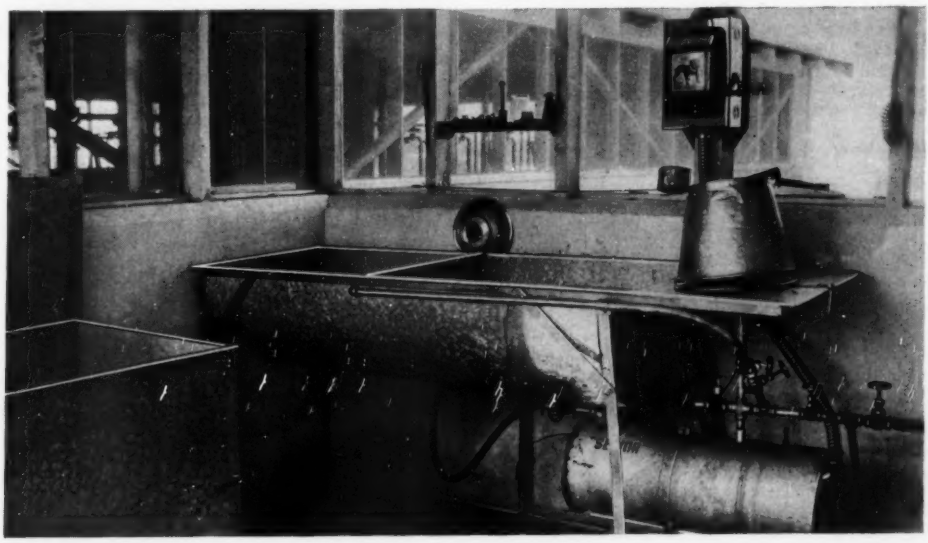
Hot water is an excellent sterilizing agent *if* it is kept hot. Most health departments approve hot water sterilization, and it is to be highly recommended, particularly for the small dairy where the investment in a steam sterilizer cannot be justified.

The way to sterilize with hot water is to immerse the utensil in the water and keep it there until all the metal of the utensil reaches a temperature of 180° or higher. Water at 180° is about 60° hotter than your hands will stand, so the utensils, properly heated, cannot be handled with the bare hands. When removed from this hot water and drained, they will dry quickly by their own heat.

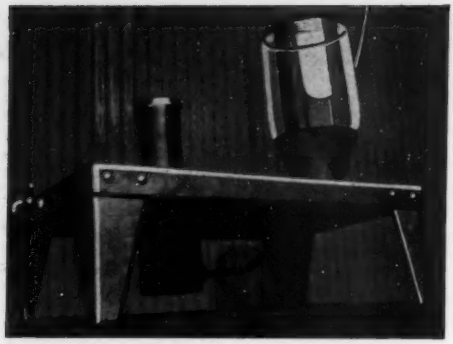
Every utensil immersed in the water lowers the water temperature. That makes it necessary to keep adding hot water or to have some means for keeping the water hot in the tub.

There are many ways to heat water. The steam boiler, the coal or wood stove or the oil stove all will do it, *if* you don't mind the fire hazard, dirt, smoke, and ashes in the dairy and the work of keeping up fires and keeping the dairy clean. In recent years, however, a number of small electric heaters designed especially for convenient use in dairies have been put on the market. They range in price from $13 up.

One type of dairy water heater consists of a



This is the sterilization equipment on the dairy ranch of John Sulgian, Fresno, California. Mr. Sulgian has used electric sterilization equipment for over six years.



A small, but sturdily constructed sterilizer. Pails and containers are inverted over steam jet for sterilization.

round bottomed tub with an electric heater in the bottom of it. The clean utensils may be dipped directly in the tub for sterilization, and water for washing may also be drawn from it. When sterilizing, the electric heating element keeps heating the water while the utensils are being dipped.

Another very simple heater is of the portable immersion type. It can be put into a pail, can, or tub of water, and needs only to be plugged into the electric circuit to start heating. It is of 1300 watts capacity and will heat 5 gallons of water at the rate of about 70° per hour.

A third type of electric dairy water heater consists of a heat insulated tank with insulated lid and a heating element in the bottom. These tanks are simple, efficient, and inexpensive, and are now made by a number of manufacturers. The tank is filled from the top and water is drawn off near the bottom. Some have automatic switches to turn off the power when the water gets hot.

Standard electric water heaters intended for house use are quite satisfactory in the dairy, but the first cost and operating cost is usually higher than for the special dairy heaters.

Electricity costs more than coal per heat unit produced. In order to keep the total cost down, one should learn to heat only the amount of water needed. Because of the nicety of control of electric heat and the saving of labor, the use of these heaters can be made to compare very favorably with other fuels.

Hot water sterilization is not complete without mentioning the teakettle. Carrying a teakettle of boiling water from the kitchen to the milk house to "scald" the utensils is a salve for doping the conscience of the man who realizes he should sterlize his tinware. A good big teakettle of boiling water, if still boiling when poured into a ten-gallon can on a fall morning will heat the can to 183°. If then poured into another can, the second can will be heated to less than 159°. It will do better on the lighter weight pails and strainers, but as a utensil sterilizer a teakettle is only a teakettle.

Bacteria cannot be killed by pouring hot water over the surface. They linger in the corners and on the thicker parts of the utensils where they do not get much hotter than the metal itself.

Where a dairyman is selling bottled milk or where his wholesale milk or cream sales involve the sterilization of several cans in addition to smaller utensils, he will find special sterilizing equipment a distinct advantage.

There are two general types of electric steam sterilizers. In one the steam is generated by heating elements and water placed in the sterilizing cabinet with the utensils. In the other, the steam is generated in some kind of boiler and conducted to the sterilizing cabinet through pipes.

First Used by Western States

Electric sterilizers first came into general use on the Pacific Coast. There are now thousands of them in daily use in California, Oregon, and Washington, and also in many other states. The first sterilizers to become popular consisted of rectangular, top opening cabinets with a capacity of four or six 40-quart cans. A depression in the bottom of the cabinet holds several gallons of water with the electric heater immersed in it. The water may be heated and part of it drawn off for use in the wash tubs. The remainder boils and fills the cabinet with steam and the steam heats the utensils. When the desired temperature is reached, the power is

(*Continued on page* 15)

The tank type sterilizer is simple, efficient and inexpensive to operate. Like other sterilizers, they are clean and eliminate the fire hazard incidental to the operation of coal or oil stoves.

The modernized kitchen of the author, showing her electric range and refrigerator.

MY KITCHEN IS AN INVESTMENT

By MRS. D. C. PRIM

UNTIL I entered the Home Improvement Contest sponsored by the Home Demonstration Club, I was satisfied with my kitchen. I worked there, lived most of my day there, and thought it met my needs. How wrong I was! The contest opened my eyes; therein lies my story:

The kitchen in which I was spending most of my working hours had plastered walls, dark oak woodwork, unpainted floor. The pantry was unpainted, with plain board shelves. The furnishings of the kitchen were a large wood range, dining table and two chairs, an old oak screen-doored safe, a cooking table, and a table for the water bucket and wash bowl. We were using oil lamps.

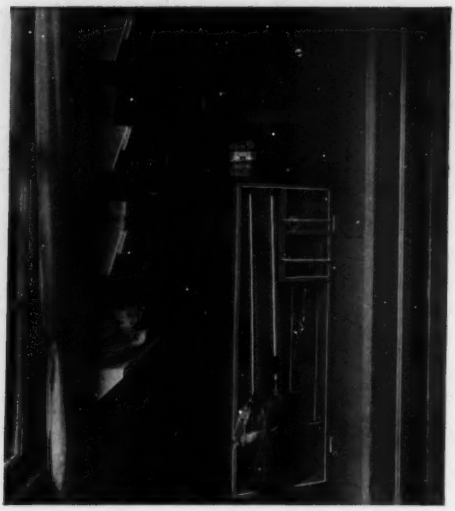
A man who owed me money agreed to whitewash the plaster walls for the account. The effect of that clean wall was an inspiration; I really started to work. In little time a sink was under the window. The entire room was needing a new dress, so the color scheme was white, gray and blue. The woodwork I painted light gray with a blue trim; the floor of the kitchen and pantry dark gray; and the walls, ceiling and shelves of the pantry I painted blue. And I did all the painting myself, with the encouraging smiles and critical comments of my neighbors.

How old and worn my equipment looked now! It would never do for the old wood stove to sit out in the middle of the floor like that; in fact, it would never do for the old woodstove to be in my new kitchen. I must have a newer and easier way of cooking. The way was found, and a beautiful gray and white Electric Range came to reign in my kitchen, giving me countless numbers of free hours to do as I wished, more time to spend with my poultry which I hoped to build into a paying proposition. It also gave me more time to work on my Kitchen Improvement Contest.

With the installation of electric service and my electric range came electric lights. Over the electric range I had placed a white shaded kitchen light with a 60 watt bulb, and a convenience outlet. In the center ceiling was installed a white shaded ceiling light with a 100 watt lamp.

I bought a kitchen cabinet, sand-papered and painted it light gray and trimmed it in blue. Then bought a nest of blue mixing bowls, and a set of blue trimmed dishes, to help carry out my color scheme. A stool for the sink; both stool and sink were painted light gray. The tables were painted gray; the dining table was moved to the center of the room and onto it was cemented a cover of blue and gray linoleum. A blue and gray linoleum was bought for the floor. A bookshelf which I painted gray was hung over the side table; on the table I placed a blue and gray vase.

In the pantry I made a cleaning cabinet on



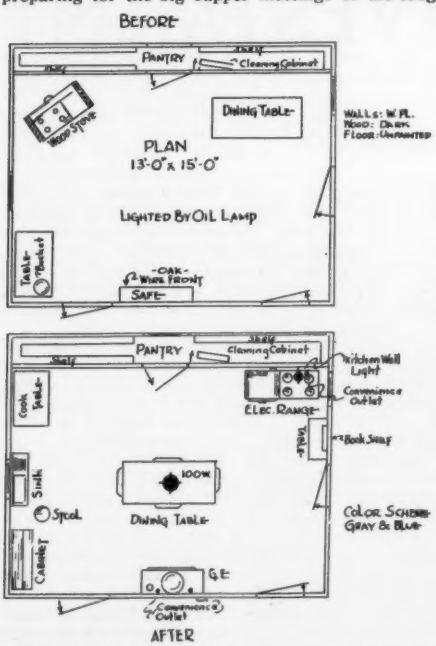
A view of the pantry with its painted shelves and cleaning cabinet.

hinges, and painted it blue. In this pantry are kept my canned goods—a greater quantity made possible by the co-operation of my electric range (and I haven't lost a can of fruit canned in the range). There are my cooking utensils, and three electric hot plates which help me wonderfully in preparing for the big supper meetings of the lodge to which my husband belongs. There also is my electric iron (a saving of a day's work each week), and my waffle iron.

The old ice box on the back porch began to be more and more of an eye-sore, and it was a glutton for ice in the summer. We needed an electric refrigerator, and *now* we have one which has paid for itself and bought three electric chicken brooders, and is going to start buying an electric incubator. This is how it did: I hired a girl to help me Thursdays and Fridays, and we dressed and prepared chickens for Saturday's market. We stored and kept them safely in my electric refrigerator. We now have a large number of regular customers, and market between 50 and 75 chickens each Saturday. Every Saturday when I take my chickens to market I do my household marketing for the next week. While we used to have fish or oysters only on Saturdays, we now have fish, oysters, steaks, brains, and any meat we want and a different meat each day. For we can buy them all when we are in town, knowing that the meat will keep safely until we want to use it.

The electric appliances have helped to pay for, and to make possible, the improvements I have made in my kitchen. The automatic electric range has given me time to work with my poultry. The electric refrigerator has stored and preserved my poultry safely, making it possible for me to market a larger quantity each Saturday. We are planning now for our bathroom, and for the installation of an electric water pump and water heater.

My improved kitchen, when completed, won for me a 8 day trip to the State College of Agriculture. It continues to give me pride in its beauty; extra time for my poultry. It has given me convenience, cleanliness and satisfaction of having a modern kitchen, and it has paid for itself!



Sketches showing layout of equipment "Before" and "After" the installation of electrical equipment.

Electric Lights for Early Turkeys

By Thomas B. Avery

A RECENT demonstration at Kansas Agricultural Experiment Station shows that turkeys respond readily to the use of artificial lights. Normally turkeys produce their first eggs during March, but may vary according to the latitude. From the market standpoint it would be highly desirable to hatch turkeys at an earlier date.

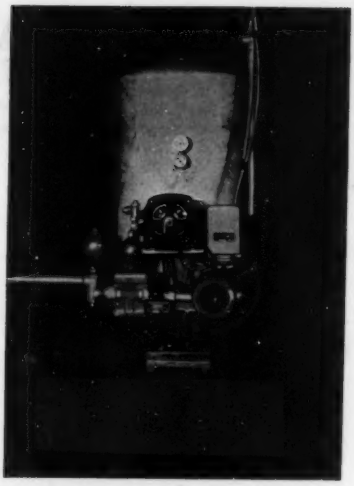
At this station the breeding flock for 1934 was divided into three groups on December 1, 1933. Birds in one group were placed on the range without lights and were allowed to roost in the trees. The other groups were housed in 15′ x 15′ laying houses and given exactly the same care, except that one lot was not lighted while the other was given morning lights at 4:30 a.m. To date it is possible to draw certain definite conclusions from the experiment.

The group lighted by a 60 watt bulb started to lay January 3. The second lot, housed but without lights, did not begin till March 8, while the flock on range laid their first egg one day later, March 9. Apparently housing turkeys has little or no influence on the time at which they begin to lay. But it is evident that artificial lighting results in earlier eggs for hatching and a consequent advantage in raising turkeys for market.

These experiments put a new slant on the use of electricity for poultry. Increased feed consumption is probably the result, rather than the cause, of increased egg production.

WATER SYSTEM PAYS ITS WAY

By ROBERT J. O'BRIEN
Harborcreek, Pa.



The heart of the water system is located in the basement of the O'Brien home.

IT is my opinion that the electric water system is the finest piece of equipment that a farmer can own. We have three such systems on our farm, also three septic tanks and an electric refrigerator. One of these water systems and the electric refrigerator we use in the house that we live in—the other two water systems and the two septic tanks are used by our tenants.

The cost for electricity to pump all the water used on our farm doesn't amount to over a few cents a day. We feel much safer with water under pressure from our electric water system because it gives us a certain amount of fire protection. Then, too, our stock always has an abundance of water. In a dry year, like we have suffered this summer, our garden is kept green by sprinkling, which would not otherwise be possible were not an electric pump used.

Secure Better Tourist Trade

We have a "Tourist" sign in front of our house and during the summer months have three rooms that we rent out to tourists. We are able to secure a better price for our rooms on account of our having a bath room and running water, which is made possible, of course, by the water system.

The other day I was checking up the repair costs on all of the electric pumps that we have and I find that the total bill doesn't amount to over $7.00. This is for seven years' operation.

Now that money is available through the National Housing Act, and you can go to your Bank and borrow the money on a straight note without a mortgage and have three to five years to pay it back at 5% interest, it would be money well spent to not only buy a water system but also to put in a bath room and other things that you have been wanting to have for so long.

When tourists stop at the home of Robert J. O'Brien (shown below) at Horton Creek, Pa., they find an abundance of running water available for washing away the dust of travel.

ELECTRICAL HOUSEKEEPING

Conducted by GAIL MEREDITH

THE TALE OF THE TURK

FOR several years my husband has made the dressing for our Thanksgiving turkey. Until two years ago he made it according to the inspiration of the moment, never twice the same, but always so deftly different, that our friends

Many good dinners come from the flock of Mrs. Homer Stone, Oregon, Wis.

who ate it, never ceased to coax him to tell them the secret of its success.

He quite honestly couldn't. But his invariable answer to their queries about what went into it was,

"Everything but the kitchen sink."

Then one year, moved by I know not what whim, he actually kept track of the things he put in our big old mixing bowl, and then, when the dressing turned out as delicious as ever, he said,

"Here is the recipe. Now, we'll just stick to this and always be sure of having the dressing turn out just right."

I think he had in mind the time, a few years ago when the dressing didn't.

It was late, quite late, Wednesday night. He was putting the finishing touches to a dressing already good enough to eat as it was.

"Taste this," he begged.

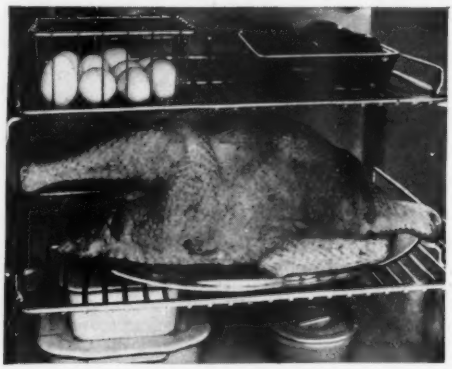
I tasted, and smacked my lips in inelegant appreciation.

"Do you think it needs just a mite more pepper?," he mused.

Perhaps it did.

But the pepper he seized was cayenne, not the harmless paprika we usually have, and one quick dash of that stirred vigorously filled the dressing with a consuming fire that brought tears to our eyes.

You can't undo seasoning. So that dressing went into the garbage can. The next morning we mournfully hustled together a make shift affair after my husband had driven down town to buy



Ready for to-morrow.

more bread. There a neighbor watching him critically passed final judgment on my housewifery.

"My wife always saves up pieces of dry bread for weeks before Thanksgiving to make our stuffing."

What answer is there to that?

Anyhow, now we have a recipe for dressing, and, if you like, you may try it, too.

6 cups bread crumbs
1 cup milk
1¼ teaspoon salt
¼ teaspoon paprika
¼ teaspoon powdered sage
1/6 teaspoon poultry seasoning
Pinch summer savory
1/8 teaspoon nutmeg
Dash black pepper
3 tablespoons melted butter
4-5 tablespoons melted fat
2 oranges (pulp)
1 apple
½ cup chopped onion
¾ cup celery, chopped
¼ cup celery leaves
2 egg yolks, boiled
¼ cup Brazil nuts.

We generally make the dressing on Wednesday

This is a new electric roaster big enough for an 8½ pound turkey. Its wattage is 1,000 and, on low, 410.

BLUE RIBBON QUALITY

Greatest Dollar Value

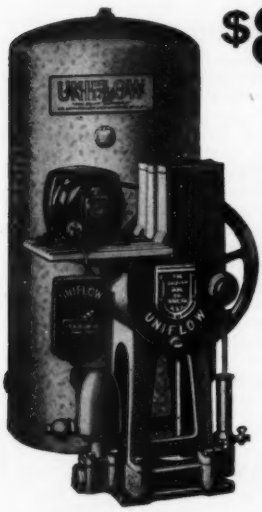
Why continue with back breaking hand pumping and water carrying? It is no longer necessary when you can obtain a Uniflow Water System at such low prices as you see advertised here. The Blue Ribbon line of water systems is rugged in construction though low in price. Many of the Uniflow's patented features are incorporated in the Blue Ribbon series. Resolve now to obtain the many benefits of water under pressure in your home. With the cost so low and Federal Aid to help you, why delay? Send the coupon below for complete information.

$43.75

THE JEWEL

For Shallow Wells

$87.60



A complete water system with 250 gallons per hour capacity. Patented oil system delivers oil to all parts of the pumps centrifugally. Patented feature on water box increases suction lift. One nut access makes repairs easy.

THE TROJAN

A System for Deep Wells

The pump is equipped with double spiral cut gears and adjustable bronze bearings to take up wear in gears and prevent back lash. Splash system of oiling is used. All moving parts run in a bath of oil at all times. Old oil can be drained out and renewed just as in the crankcase of your car. The ¼-horse power size delivers 200 gallons per hour at a 40 ft. depth.

From 250 to 3600 Gallons per Hour

Uniflow Water Systems include every kind of pump up to 3600 gallons per hour capacity. They offer users 10 advantages. These 10 points are described in a booklet which you may have for the asking. Send coupon below.

Government Financing

The new Federal Housing Act includes financing the installation of permanent water systems. Local banks everywhere can give you information on how to go about obtaining government aid in making this needed improvement — or ask your UNIFLOW dealer for complete information.

GUARANTEED

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"THE PUMP SUPREME"

UNIFLOW MANUFACTURING CO., ERIE, PENNA.

Makers of Fine Precision Equipment Since 1921

Water Systems — Water Softeners — Water Filters — Beer Pumps
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UNIFLOW MANUFACTURING CO.
Erie, Pa.

Please send me booklet describing 10 points of superiority of Uniflow Water Systems. Am giving you following information concerning my needs:

Depth of Well.....How Many Gallons

of Water Do You Need Per Day.....

Name .....

Address .....

.....

night. I have the turkey all ready, and we stuff him and set him away in the refrigerator to wait his roasting on the morrow.

Into the refrigerator with him go the garnishes that make his platter gayer to the eye. This year it is going to be rose apples on rings of green pineapple. I turn my apples red by cooking them, peeled, and cored, in a syrup made with 1 cup of water, two cups of sugar, a cup of small red cinnamon candies, boiled till it threads. The apples should cook very, very gently, a few at a time, until they are tender and red all over.

I cook the rings of pineapple in their own juice with just enough vegetable coloring to bring them to the proper shade of green.

The rolls, made Monday or Tuesday, wait in the refrigerator till Thanksgiving morning, too. A gelatin salad can be made beforehand, so can the pie crust, if you cover it tight. Salad dressing, white sauce, tomato cocktail, if you canned tomatoes last fall, all of these can be ready, waiting in the refrigerator when you tuck the turkey away the last thing Wednesday night.

Roasting Turkey Electrically

I am baking my turkey this year, as I did last, in an oval electric roaster. I think it both economical and convenient to use. On High it takes 635 watts, so it can be plugged into any convenience outlet. It has a thick layer of insulation around the sides and bottom, so I can leave it sitting on

Ready to eat.

my work table while it roasts the bird. Part of the time I run it on Low; then it will keep on cooking with 275 watts.

I like the convenience of having my fire built just to fit the job. It isn't any work to build it, nor any trouble to keep it going. If there is more than I need, I have only to pull out the plug and shove it in the other way. That shuts off part of the heat at once.

This is clean cooking. The dish, if it wern't too big, could go right in and take its place on our dinner table. It is an attractive green and cream enamel that is just as fresh and clean as the platter that will receive the bird.

The cooker roasts without basting, without burning, and the turkey will come out with a perfect suntan, crisp of skin, but tender enough to fairly fall apart under the carving knife.

What more could you ask for a turkey than that?

WHEN YOU PUT THE KETTLE ON

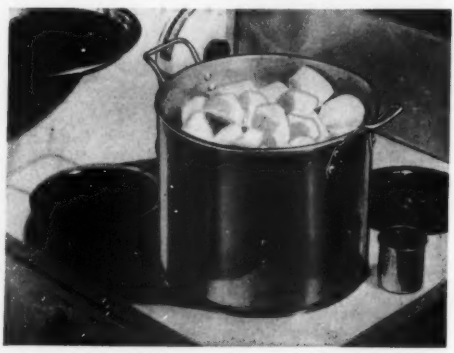
WHEN you buy electricity to cook with, you can make your kilowatts go farther if your pots and pans are in partnership with your range. The right kettle and the proper pan make a definite

A well designed enamel sauce pan.

difference in the time,—and so in the electricity—that it takes to get your meals. Because you buy your fuel as you need it, and can buy as little or as much as you like, it lies in your own hands to use it advantageously, to get your money's worth.

Early last year Miss Evelyn Roberts of the Home Economics Department of the University of Washington made a careful, scientific study of the utensils for surface cookery. Her analysis of the effect the material, the polish, the size and shape of the vessel had on the length of time it took to boil a certain amount of water in it, and the proportion of the electricity used that actually went into heating the pan and the liquid, not the air, leads to very definite conclusions about selecting utensils.

Miss Roberts sums it up like this in her report



This aluminum kettle with polished sides just fits the burner.

Excellent examples of twin pans.

of this work, Bulletin No. 283, "Utensils for the Electric Range."

"The characteristics of an efficient utensil for top cooking on the electric stove are: a dull surfaced, flat bottom; highly polished, straight sides; well fitting cover; and the material heavy enough to insure durability and no warping."

Your choice of materials is wide, you see.

"It is rather hard to come to a definite conclusion on this point," says Miss Roberts. "No one metal or material stands out as having more desirable characteristics than the other. However, if units and utensils are considered together, some combinations show up better than others. From the series of experiments on iron, steel, copper, aluminum, enamel and glass ware the following recommendations are made as to their use with the various units:

Open Units—Any metal pan with flat, dark bottom is good.
Solid Units—Iron and aluminum pans are good.
Ring Units—Iron and aluminum pans are good.
Rod Units—Enamel and aluminum pans with black bottoms are good.
Cone Units—Copper pans with black bottoms and glass ware are good.

"A dull surfaced flat bottom."

Of course the pan must be big enough to cover the unit. If it does not, heat will escape around the edges without doing its share toward cooking the dinner. And it must be flat, Miss Roberts proved, so the surface of the pan and the surface of the unit can touch each other at as many points as possible. Ideally, they should be in contact all over, because heat passes quickly from one metal to another when the metals are touching, but more slowly when they are separated by an air space. In fact, Miss Roberts says that in the laboratory test when the pan was separated from the unit by an air space no wider than one-twenty-fifth of an inch,—just about enough to let the light through, I should think, it took 19 minutes instead of 15 minutes to bring the water to a boil and cut down the efficiency of the pan from 71.5 to 59.9%.

Improper Utensils Waste Electricity

So that is why you waste current using a kettle with a warped or dented bottom that rocks back and forth on the burner. It takes more electricity to get the heat you need into your food.

If you take another glance at that table of Miss Robert's, you will see that for all but the solid or ring units, she recommends that the bottom of the kettle have a dull or black surface. A shiny surface reflects part of the radiant heat away from the pan, while dull or black surfaces absorb it. In every comparison she made, the time to boil was shorter and the efficiency of the pan greater for the black bottomed utensil.

So bottoms are black, though clean, for electric range dishes.

The sides on the contrary should be shiny so they will let less of the heat you get into the vessel radiate out through the walls. They should be straight rather than flaring or convex, too, says Miss Roberts, because the flaring walled vessel has a greater outer surface area and so loses by radiation more heat than the vessel with a smaller surface area.

If you were to go down to the stores today looking for kettles and pans to cook with, you would find that several manufacturers are already

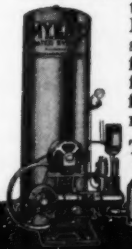
(*Continued on page* 15)

MYERS Prices are Low

RUNNING WATER

but MYERS Quality *has never Varied!*

PRICES can and do change. But through all the years the high standard of MYERS quality has never varied. Now, while prices are still low, is the time to get that good MYERS Water System you so long have wanted. Models for deep or shallow wells, to fit every need. Write today for attractive booklet and name of nearest dealer.



The F. E. Myers & Bro. Co.
365 Fourth St. Ashland, Ohio
"Pump Builders Since 1870"

MYERS WATER SYSTEMS

Eligible for Financing under the National Housing Act

Electrical Improvements

Financed Under National Housing Act

The interesting story of the application of the Federal Housing Act to electrical improvements appeared in the October issue of ELECTRICITY ON THE FARM in full detail. All over the country an organized effort is being made with strong government support to enable home owners to make needed improvements now. Besides its contribution toward more livable, beautiful and convenient homes, the ultimate effect of this national movement will be the stimulation of countless trades and industries, the benefits of which will flow back to the farmer and all other citizens.

ITEMS SUBJECT TO FHA FINANCING

Additional convenience outlets.
Installation of yard lights.
Poultry house lights.
Barn ventilation systems.
Kitchen exhaust fans, built-in.
Electric dishwashers, built-in.
Dairy utensil sterilizers, built-in.
Dairy water heaters, plumbed-in.
Stationary orchard spray plants.
Permanent irrigation systems.
Electric hot beds.
Electric water systems, including plumbing fixtures in kitchen, bathroom, etc.
Electric ranges permanently connected.
Electric water heaters, plumbed-in.
Electric heaters, built-in, for bathrooms, etc.
Milking machines of the pipe line type.
Milk coolers, built-in.
Feed elevators and mixers, if part of building.
Wiring the house and farm buildings.
Lighting fixtures, permanently attached.
Refrigerators, connected with BX cable wiring.

For convenient reference following is a brief outline condensed from the October issue, as to the method of obtaining FHA loans:

WHO IS ELIGIBLE—Any property owner.

WHERE TO APPLY—To any financial institution approved by the Federal Housing Administration, or to a contractor or dealer.

SIZE OF LOANS—From $100 to $2,000.

HOW LONG NOTES MAY RUN—For any number of months from one to five years.

WHAT SECURITY—That you have an adequate regular income and a good credit record. Other security may be accepted if deemed advisable.

ASSURANCES REQUIRED—That you own the property; that the income of the signers of the note is adequate to meet the payments; that the mortgage if any is in such standing as to justify the bank in making the loan. Lastly, that the money will be used solely for property improvement.

SIGNATURES REQUIRED—Signature of the property owner and of the wife if married. No other co-signers or endorsers required.

COST OF CREDIT—The maximum amount of fee or interest collectible by the financial institution is $5 per $100 original face amount of a one-year note payable in installments.

For further complete details our readers are referred to the article in the October issue of ELECTRICITY ON THE FARM by George Kable.

Manufacturers of electrical products that may be financed under the FHA plan, are authorized to use the line—

Eligible for financing under the National Housing Act

When You Put the Kettle On

(*Continued from page* 13)

making cooking equipment that meets these requirements.

You will find aluminum pans and kettles of various weights, in sizes to fit the different burners of

The visibility is good

a range. If you are looking for a pan of medium weight, you will find it; if you want heavy cast aluminum, that is waiting for you, too, and either one will have a dull satin finished or black bottom.

The handles of this newest kitchen ware show engineering improvements. They are well designed to give you a firm grip on the pan, and planned to lessen the danger of turning in your hand. And last of all,—some woman had a hand in this, I'll venture, they offer no hard places to clean.

Covers are right, too. You will find that on these dishes made especially for electric cooking, they fit tightly to prevent the waste of heat. Covers of oven glass fit many of these dishes. They are heavy enough to fit down snugly. There are lots of times when being able to see into a kettle might prove highly advantageous. You like to keep a wary eye on dumplings, don't you?

Enamelware in New Shades and Designs

If you want enamel, you can get it in lovely colors and smart shapes. One manufacturer has developed a beautiful set of cooking dishes in an enamel that is both stain and chip proof. The sauce pan of this set has a clever sieve arrangement around the edge of the cover so it strains all the way round.

Of course with the whole kitchen awakening to a new sense of beauty and importance, it was inevitable that pots and pans should come in for a little beauty treatment, too. And they have. These new dishes, aluminum and enamel alike, are being designed by artists who dream their beauty for engineers to bring into practical being.

Sauce pans, kettles, and Dutch ovens are expertly fashioned to give their workaday usefulness charm as well. The Dutch ovens in several lines have a particularly jaunty grace. Perhaps it is the set of the smart Bakelite handles, maybe it lies in the curve of the cover. Whatever it is, it makes them well worth a second look when you are shopping around.

The twin and triplicate pans are made by several manufacturers. They fit snugly together on one burner and cook two or three vegetables with one unit. They are not designed to use alone, and would waste considerable heat that way, but when you want two things at once, or three perhaps, they will cook them for you economically, saving both space on your range and current through your meter.

Wholesome Milk

(*Continued from page* 6)

cut off automatically. These sterilizers usually have heating elements of 5 to 8 kw. capacity. They need only to be connected to the electric circuit to be ready to use.

In the other style sterilizing cabinet only enough water is evaporated to furnish the steam or vapor necessary to kill the bacteria. The heaters are not immersed in water, but supply their heat to the air as in an insulated oven. The only water put into the sterilizer is that which adheres to the utensils after rinsing. This is sufficient to fill the cabinet with steam or vapor when the temperature of the utensils is raised by the space heaters. After loading the sterilizer and closing the switch, the process is completely automatic. The utensils may remain in the cabinet where they are dry and sterile until the next milking. Since only a small amount of water is evaporated, the heating is accomplished with lower wattage elements. The performance

RUNNING WATER
YOUR FAMILY DESERVES IT

NOW

is the time to install a

CID Water System

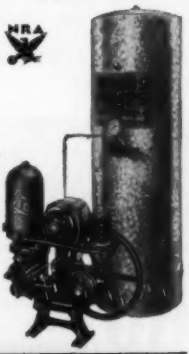
—financed by FHA

The Federal Housing Act enables home owners to enjoy the advantages of running water. Plenty of water for bathing, indoor toilets, laundry, dish washing. No more frozen pumps.

CID Water Systems are simple, trouble-free. Easiest to service. Electric driven. Fully automatic. Low operating cost. And now CID prices are the lowest in history! Model shown pumps 250 gallons per hour—now only $67.00. Other models, shallow and deep well, $49.85 up.

But see your CID dealer at once. Or write us now for free book describing all CID models.

NRA



GOULDS PUMPS, Inc.
Seneca Falls, N. Y.

GOULDS

Eligible for Financing under the National Housing Act

in killing bacteria is that of first-class steam sterilization.

If your conception of a steam boiler is a smoke stack on one end, an ash pit at the other, and a big black iron belly full of coal and water in between, you'll have to change it. Electric boilers are now made about the size of a milk can. You fire them by turning a switch and they make neither smoke nor ashes. No boiler room is required and the whole boiler may be set up on a shelf out of the way. These boilers are made plain or with automatic pressure and feed water control and other special devices. The steam from them may be used for heating water or sterilizing equipment as with any other boiler.

Steam Boiler Units

Electric steam boilers ordinarily require large heating elements to keep up steam. In order to overcome this difficulty a special "steam accumulator" has been designed. These boilers are of 30 to 60 gallon size and heavily covered with insulating material to hold the heat. Heating elements of 1000 watts or less are used. The principle of this boiler is that water may be heated to more than 300° F. without changing into steam, if it is held in the boiler under 60 pounds pressure. The instant this super-heated water is released from the boiler, it flashes into steam. A small amount of heat may therefore be applied over a long time to produce a large amount of steam to be used in a short time. The advantage lies in lower service charges for electricity, and cheaper wiring.

Steam boilers are usually somewhat more expensive to install and to operate than cabinet type sterilizers, because of the piping connections and heat losses between boiler and utensils.

Many Types to Choose From

The many types of electric sterilizing equipment offer a choice to fit any dairy. They all have the advantages of cleanliness, reduced space requirements, less labor, and reduced fire hazards. Those sterilizers with automatic control go still further. They do the same consistently excellent job of sterilizing utensils day after day including haying season and the day the health inspector drops in. And you only have to snap the switch, then go to the field and forget it.

Questions and Answers

Conducted by H. J. GALLAGHER

Question: *I have a three-horsepower gas engine with which I use a four-cell "hot shot" battery to furnish the spark.*

Where can I obtain or how can I make an inexpensive transformer which I can hitch on to my 25-cycle 110-volt lighting current to furnish the spark and do away with the hot shot?

—*A. H. P.*

Answer: A heavy duty 6-volt transformer of 40-60 watt capacity may be used with a jump spark coil. On a make-and-break system a heavy-duty 30-watt transformer in combination with a coil may be used.

Question: *On page 6, June issue of* ELECTRICITY ON THE FARM *is an illustration of a handy electric heater for heating water in a pail. Please send me information on the size of heater and the time required to heat 12 quarts of water for a milking machine.*

RAYMOND JAMES,
R. D., Ballston Spa, N. Y.

Answer: One heat unit, B.t.u. (British thermal unit) is the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit. To raise 12 quarts (25 pounds) of water 115°F. from 50°F. to 165°F. would require 2,875 B.t.u. One kw.-hr. equals 3,415 B.t.u. Consequently if no allowance were made for loss of heat by radiation and conduction a heating element of 842 watt capacity would raise 25 pounds of water 115°F. in 60 minutes or a 1,684 watt element would produce the same result in 30 minutes.

Under ordinary practice it would actually take a 2500 watt element approximately 30 minutes in an open pail in a room with a temperature of 70°F.

Insulating the pail would materially increase the efficiency of the heater. One method of insulating is to make a covered "nest" for the pail in an insulated box.

BURKS PATENTED PUMPS WATER SYSTEMS ARE Different and Better

NO PULLEYS CYLINDERS GEARS HAMMER

NO PLUNGERS BELTS VALVES TROUBLE

WRITE FOR COMPLETE STORY

DECATUR PUMP COMPANY DECATUR, ILLINOIS

Eligible for Financing under the National Housing Act

A free trial convinced me. They made the old range cook like new. You'd better try them!

CHROMALOX
SUPER-SPEED RANGE UNITS

"My men eat their 'three squares' on time since we had our power company install CHROMALOX heating units on our range. Things seem to cook in half the time and the electric bills are lower".

Don't discard or fuss over your old range. These new units will make it even better than new. *Ask your Power Company* for free trial or write to Edwin L. Wiegand Co., 7580 Thomas Blvd., Pittsburgh, Pa.

Fits ALL makes of ranges

ON THE AIR

Conducted by JIMMIE J. HENRY

Wynn Wails With Weekly Woe

ABOUT 50 gags and bits of humor calculated to bring a laugh are spent weekly, Ed Wynn wails, and when they go into the microphone, they're gone forever, in contrast to a stage script that's good for as long as the customers can stand the show.

"Radio jokes are like income taxes," says the Fire Chief, "You've just got to 'git it up.' But there's consolation in knowing that a radio show is heard by just as many people in one night as have seen me in the theatre in 30 years. It's still a little difficult to comprehend, but apparently, its a fact."

• • •

Bradley Barker, CBS animal imitator has trouble because his neighbors complain about the livestock he keeps in his home.

• • •

"March of Time" Returns Over CBS Stations

PIONEER radio series of news dramatizations, the "March of Time" is again being heard over CBS stations every Friday evening.

Arthur Pryor, Jr., is supervising the productions and the material is prepared, as usual, by Time Magazine. Howard Barlow has resumed his task of arranging and conducting the inter-scenic music.

During past seasons an outstanding panel of actors and actresses, capable of "ghosting" the voices of all world famous personalities has been built up, including such radio stars as Jack Smart, William Adams, Frank Readick, Peggy Allenby, Hugh Conrad, and many others.

Offering realistic enactments of from six to eight of the outstanding events in each week's news, the "March of Time," is one of radio's most ambitiously conceived and carefully prepared programs. About 75 people, including actors, musicians, sound effects men, dramatists, casting experts, and others are employed each week in preparing and producing the news dramatizations.

Preparation of the script is started early in the week, with frequent revision up until program time on Fridays, in accordance with the shifting developments of current affairs during the week. In the same manner rehearsals of the large cast start on Wednesdays and are also carried on until time for the broadcast.

Many times the "March of Time" has been ranked at the top of the list of dramatic programs in the United States. A special broadcast of the program to England brought similar acclaim from across the sea.

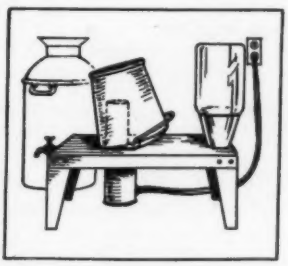
What's New

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Electric Steam Dairy Sterilizer

Steam sterilization for utensils on the dairy farm is still a common practice despite the acceptance of electric dry or moist air sterilizers during recent years. The need for sterilization is one well recognized as necessary where milk of low bacterial count is to be produced.



A new low-price electrically heated steam dairy sterilizer has been recently announced by an eastern firm. A copper steam chamber and reservoir are mounted on a low gal-

MOTOR IN HANDLE

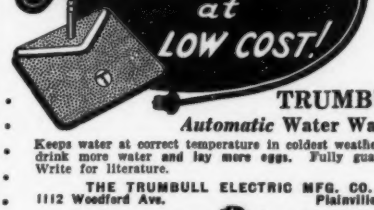
STEWART Clipmaster

A Fine, Fast and Economical Electric Cow and Horse Clipper

The Clipmaster is a completely self-contained machine with an extra good universal motor inside the handle. You simply plug in at any electric outlet and clip away easier and better than ever before. Specially designed ball bearing tension uses very little pressure and the plates retain a keen cutting edge for a remarkably long time. Built strong and sturdy throughout. Complete with 20 feet of rubber covered 3-lead cord. Hand power clipping machine only $12.50. At your dealer's or send us $2.00. Pay balance on arrival. Send for complete catalog showing the entire line of Stewart Clipping and Shearing machines—Chicago Flexible Shaft Company, 5324 Roosevelt Road, Chicago, U. S. A. 44 *Years Making Quality Products.*

Now only $15.00

MORE WINTER EGGS at LOW COST!



TRUMBULL *Automatic* Water Warmer

Keeps water at correct temperature in coldest weather. Hens drink more water and lay more eggs. Fully guaranteed. Write for literature.

THE TRUMBULL ELECTRIC MFG. CO.
1112 Woodford Ave. Plainville, Conn.

A GENERAL ELECTRIC ORGANIZATION

PROVEN PRACTICAL!

All appliances on the list below have been found economically practical for farm service. Most of them should be used on every farm. Why not get the facts on those that would help you with your hardest chores?

You can get much valuable information from our advertisers—how much the equipment costs to buy and to operate, how it will help you, etc. For information that advertisers can't supply, fill out and send us the coupon at the bottom of this page.

FOR THE HOUSEHOLD:
Ranges (*see advt., inside front cover*)—Refrigerators (*see advt., page 11*)—Clothes Washers—Vacuum Cleaners—Ironing Machines—Dishwashers—Flat Irons—Food Preparing Machines—Ice Cream Freezers—Sewing Machines—Table Cooking Appliances—Clocks—Range Replacement Units (*see advt., page 16 and inside front cover*)—Floor Polishers.

FOR WATER SUPPLY:
Automatic Water Systems (*see advt., pages 11, 13, 15 and 16*)—Water Heaters (*see advt., inside front cover*).

FOR THE DAIRY:
Milking Machines—Milk Coolers (*see advt., page 11*)—Cream Separators—Churns—Bottle Washers—Dairy Sterilizers—Clipping and Grooming Machines (*see advt., page 17*).

FOR POULTRY:
Incubators—Brooders (*see advt., page 17*)—Time Switches—Drinking Fountain Warmers (*see advt., page 17*)—Ultraviolet Light.

FOR REPAIR AND MAINTENANCE:
Soldering Irons—Tool Grinders—Drills—Paint Sprayers—Woodworking Machinery—Motors.

MISCELLANEOUS:
Feed Grinders—Ensilage Cutters—Corn Shellers—Hay Hoists—Feed Mixers—Stationary Spray Plants (*see advt., page 13*)—Burglar Alarms—Ventilators—Soil Heating Equipment—Insect Traps and Screens—Electric Fencing—Radio Sets—Sheep Shearing (*see advt., page 17*)—Light for Stimulating Plant Growth—Floodlights—Septic Tanks (*see advt., page 11*).

▼

FREE INFORMATION COUPON

Electricity on the Farm, 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying.

.....

.....

My name is .....

Address .....

.....

I get electricity from .....

..... 11-34

vanized iron stand. Water is fed to the steam chamber by gravity from the reservoir as fast as it is evaporated by the heating element. Sterilization of utensils is effected by inverting them over the steam jet, or placing in a chamber over it. The sterilizer is available with heating units of 1000 or 2000 watts.

Portable Lamps

A light at just the right height and in just the right place is now possible, through the efforts of a middle-west manufacturer. A portable lamp, in three types, for study and reading, for indirect lighting and for general use is the answer to this long felt need.

The portable, adjustable lamp.

The lamp bracket is fastened to the wall by means of a push pin. This pin may be pushed into any wood or plaster surface without disfiguring it and yet holds the lamp securely in place. The lamp is equipped with an insulated cord eight feet long and safety rubber unbreakable plug which may be connected to any socket.

Lamps suitable for the needs of every member of the family and appropriate for every room in the home are being offered.

A Correction

Through a transposition of cut, the wrong illustration of a Uniflow pump appeared in the advertisement of the Uniflow Manufacturing Company, Erie, Pa., in the October issue of ELECTRICITY ON THE FARM, page 13, over the caption "The Jewel For Shallow Wells."

The type of pump illustrated is unsuited for use in connection with a water system. The correct illustration appears in an advertisement by the same company appearing in this issue of ELECTRICITY ON THE FARM.

CLASSIFIED ADVERTISING

The PARAGON POULTRY TIME SWITCH is scientifically designed and approved by state universities. It provides automatic control both morning and night and DIMS THE LIGHT AT NIGHT to allow the hens to return to roost. Low price and UNCONDITIONALLY GUARANTEED. WRITE for full information today. PARAGON ELECTRIC COMPANY. Van Buren and Dearborn Sts., Chicago, Ill.

TITLE CONTEST AWARDS

SEPTEMBER COVER

$20 First Prize for September Cover

"The 'light of knowledge' dawns doubly bright
Where all is made 'clear' with electric light."

MRS. FRANCIS N. DANIELS,
Box 66, Foxboro, Mass.

Nine $2.00 Prizes for September

"A 'switch' in the school used to bring fright,
But now it brings pleasant electrical light."

EDWARD S. DROWN, Heath, Mass.

"Our eyes will stay young and bright
Now that our school has electric light."

BOBBY SMITH, Carrizo Springs, Texas

"Watchful parents will be wise,
And take good care of their children's eyes,
And see that all school houses of today
Are softly lighted the electrical way."

MISS JEAN MIRIAM WALLACE, R.F.D. 1, Gahanna, Ohio

"Children eager, eyes are bright,
Studying 'neath electric light."

REED M. PERKINS, R.F.D. No. 7, Springfield, Ill.

"All schoolrooms are cheerful and bright
Where they have electric light."

MRS. OTTO K. RAAB, R.F.D. 5, Lancaster, Ohio

"In modern rooms, with electric lighting
Our children learn arithmetic, reading and writing."

MRS. NORMAN MAGILL, R.F.D. 3, St. Johnsbury, Vt.

"Who cares whether skies be dark or bright,
When the schoolroom's equipped with electric light?"

MRS. L. S. BUSHNELL, R.F.D. 6, Clinton, Mo.

"Contented children here we see,
With the schoolroom lighted electrically."

THEO. LOCKENWITZ, South Lee, Mass.

"The glowing ray of an electric light
Aids the kiddies and preserves their sight."

MRS. FRANK MARTIN, R.F.D. 6, Trenton, Mo.

RULES
November Title Contest

Ten cash prizes will be awarded for the 10 best titles for the picture on the front cover of this magazine.

The first prize will be $20 cash and nine second prizes of $2 in cash will be awarded.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

Titles need not be longer than 10 words — the shorter the better — and they do not have to rhyme.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before December 1st.

Winning names and titles will be announced in the January issue.

Send your title on the coupon or make out a similar form on a plain sheet of paper or government postcard.

My title for the November Front Cover Picture of ELECTRICITY ON THE FARM is .....

.....

.....

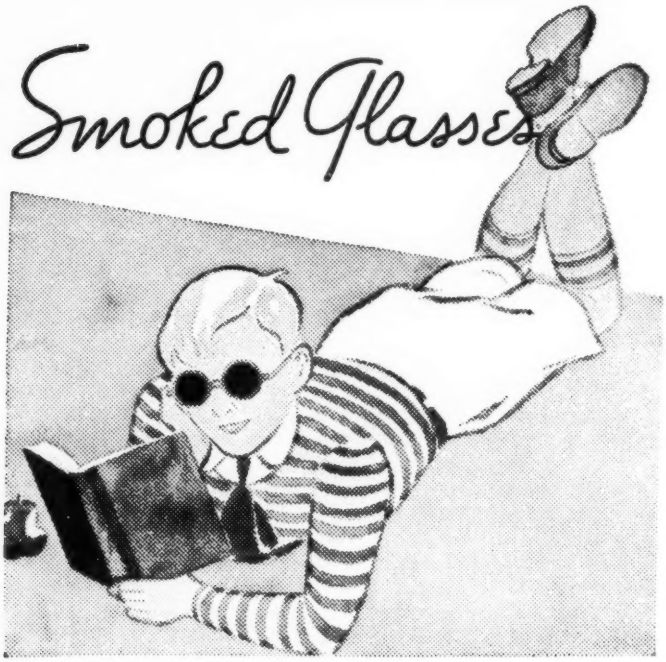
.....

(a) Do you approve the A.A.A. plan of reducing surpluses by rental and benefit payments? .....

.....

My name is ..... R.F.D. .....

Post Office ..... County ..... State 11-34



Does Your Boy—or Girl Study Under Poor Light?

INADEQUATE STUDY LIGHT is just like putting smoked glasses on your children. If your boy holds his books noticeably closer than 14 inches, he needs better light and possibly glasses. Nearly one-fourth of all school children suffer from damaged eyesight. Science now reveals that much of this may be avoided.

Check the lighting in your home right now. You, as well as your child, will benefit from the safety and convenience of proper lighting.

Try the new Better Sight Portable Lamps bearing the approval tag. See that walls and ceilings are light in color. A little paint will work wonders. Have the eyes of your family examined regularly.

THE BETTER LIGHT - BETTER SIGHT SPECIALIST AT YOUR POWER COMPANY WILL GLADLY ANSWER YOUR QUESTIONS.